IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-38 (cancelled)

39. (currently amended) A method for early detection of subacute, potentially catastrophic illness in an infant comprising:

(a) monitoring ~~time series~~ frequency histograms of RR intervals in the infant;

(b) identifying at least one characteristic abnormal pattern or distribution; and

(c) correlating the at least one abnormal pattern or distribution with said illness.

40. (previously presented) The method of claim 39, wherein the illness is infectious.

41. (previously presented) The method of claim 40, wherein antibiotic therapy is initiated and a diagnostic work-up for the illness, comprising obtaining a blood culture from the patient, is provided when the at least one characteristic abnormal pattern or distribution is identified.

42. (previously presented) The method of claim 40, wherein the illness is necrotizing enterocolitis.

43. (previously presented) The method of claim 42, wherein a diagnostic work-up for the illness, comprising an X-ray of the infant or a pathological specimen from the infant, is provided when the at least one characteristic abnormal pattern or distribution is identified.

44. (previously presented) The method of claim 40 wherein the illness is selected from the group consisting of pneumonia, sepsis, and meningitis.

45. (previously presented) The method of claim 68, wherein the data set is normalized.

46. (previously presented) The method of claim 45, wherein the data set contains on the order of about 10^3 to 10^4 sequential RR intervals.

47. (previously presented) The method of claim 45, wherein the at least one characteristic abnormal pattern or distribution is identified based on at least one of the third and higher moments of the data set.

48. (previously presented) The method of claim 47, wherein the at least one moment of the data set includes the skewness of the data set.

49. (previously presented) The method of claim 48, wherein the illness is sepsis or necrotizing enterocolitis.

50. (withdrawn-previously presented) The method of claim 47, wherein the at least one moment of the data set includes the kurtosis of the data set.

51. (withdrawn-previously presented) The method of claim 50, wherein the illness is sepsis or necrotizing enterocolitis.

52. (previously presented) The method of claim 45, wherein the at least one characteristic abnormal pattern or distribution is identified based on at least one percentile value of the data set.

53. (previously presented) The method of claim 52, wherein the at least one percentile value is the 10^{th} percentile value.

54. (previously presented) The method of claim 53, wherein the illness is sepsis or necrotizing enterocolitis.

55. (previously presented) The method of claim 45, wherein the at least one characteristic abnormal pattern or distribution is identified based on the variance, standard deviation or coefficient of variation of the data set.

56. (previously presented) The method of claim 55, wherein the illness is sepsis or necrotizing enterocolitis.

57. (previously presented) The method of claim 49, further comprising a diagnostic work-up.

58. (withdrawn-previously presented) The method of claim 50, further comprising a diagnostic work-up.

59. (previously presented) The method of claim 53, further comprising a diagnostic work-up.

60. (previously presented) The method of claim 55, further comprising a diagnostic work-up.

61. (previously presented) The method of claim 39, wherein a diagnostic work-up is provided when the at least one characteristic abnormal pattern or distribution is identified.

62. (previously presented) The method of claim 39, wherein the infant is a neonate.

63. (withdrawn-original) A method for early detection of subacute, potentially catastrophic illness in an infant comprising:

(a) monitoring the infant's RR intervals;

(b) generating a normalized data set of the RR intervals;

(c) calculating one or more of (i) moments of the data set selected from the third and higher moments and (ii) percentile values of the data set; and

(d) identifying an abnormal hear rate variability associated with the illness based on one or more of the moments and percentile values.

64. (withdrawn-currently amended) The method of claim ~~5363~~, wherein the moments include the third moment of the data set.

65. (withdrawn-previously presented) The method of claim 63, wherein the moments include the fourth moment of the data set.

66. (withdrawn-previously presented) The method of claim 63, wherein the percentile values include the 10^{th} data percentile value.

67. (withdrawn-currently amended) The method of claim ~~6467~~, wherein the infant is a neonate.

68. (previously presented) The method of claim 39, wherein the at least one characteristic abnormal pattern or distribution is identified from a data set of RR intervals.

69. (currently amended) An apparatus for early detection of subacute, potentially catastrophic infectious illness in a patient, wherein the patient is an infant, a newborn infant, a toddler, or a child, the apparatus comprising:

(a) a monitoring device, continuously monitoring ~~time series~~frequency histograms of RR intervals in the patient; and

(b) a microprocessor, identifying at least one characteristic abnormal pattern or distribution in the RR intervals that is associated with the illness.

70. (Canceled)

71. (previously presented) The apparatus of claim 69, wherein the microprocessor performs the step of generating a normalized data set of RR intervals.

72. (previously presented) The apparatus of claim 71, wherein the microprocessor calculates one or more of the third and higher moments of the data set and identifies the characteristic abnormal pattern or distribution based on the one or more moments.

73. (previously presented) The apparatus of claim 72, wherein the microprocessor calculates the skewness of the data set and identifies the characteristic abnormal pattern or distribution based on the skewness.

74. (withdrawn-previously presented) The apparatus of claim 72, wherein the microprocessor calculates the kurtosis of the data set and identifies the characteristic abnormal pattern or distribution based on the kurtosis.

75. (previously presented) The apparatus of claim 71, wherein the microprocessor calculates one or more percentile values of the data set and identifies the characteristic abnormal pattern or distribution based on the one or more percentile values.

76. (previously presented) The apparatus of claim 75, wherein the microprocessor calculates the 10th percentile value of the data set and identifies the characteristic abnormal pattern or distribution based on the 10th percentile value.

77. (withdrawn-previously presented) An apparatus for early detection of subacute, potentially catastrophic infectious illness in a patient, wherein the patient is selected from the group consisting of a premature newborn infant, infant, newborn infant, toddler and child, comprising (1) a monitoring device, continuously monitoring the patient's RR intervals, and (2) a microprocessor, said microprocessor performing steps comprising:

(a) generating a normalized data set of the RR intervals;

(b) calculating one or more of (i) moments of the data set selected from the third and higher moments and (ii) percentile values of the data set; and

(c) identifying an abnormal heart rate variability based on one or more of the moments and the percentile values.

78. (withdrawn-original) The apparatus of claim 77, wherein the microprocessor calculates the third moment of the data set.

79. (withdrawn-original) The apparatus of claim 77, wherein the microprocessor calculates the fourth moment of the data set.

80. (withdrawn-original) The apparatus of claim 77, wherein the microprocessor calculates the 10th percentile of the data set.

CONCLUSION

Claims 39-69 and 71-80 are pending in the application, of which claims 50, 51, 58, 63-67, 74, and 77-80 are withdrawn from consideration as being drawn to non-elected invention.

Please charge any excess fees due and credit any overpayment to Charge Account No. 50-0423.

Respectfully submitted,

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